=> d his

(FILE 'HOME' ENTERED AT 17:28:04 ON 07 DEC 2007)
FILE 'CA' ENTERED AT 17:28:12 ON 07 DEC 2007
L1 10387 S ADATOM? OR ADION?
L2 327 S AD ATOM? OR AD ION?
L3 7 S L2 AND GALVAN?
L4 124 S L1-2 AND RAMAN
L5 185 S GALVAN? AND RAMAN
L6 316 S L3-5
L7 229 S L6 AND PY<2004
L8 176 S L7 NOT (EPITAX? OR CORROSION OR BATTERY)
L9 4 S L6 NOT L7 AND PATENT/DT
L10 180 S L8-9

=> d bib,ab l10 1-180

L10 ANSWER 14 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 139:204167 CA
TI In Situ CRM Study of the Self-Oscillating Cu-(II)-Lactate and Cu-(II)-Tartrate Systems
AU Leopold, S.; Arrayet, J. C.; Bruneel, J. L.; Herranen, M.; Carlsson, J.-O.; Argoul, F.; Servant, L.
CS Angstrom Laboratory, Department of Materials Chemistry, Uppsala University, Uppsala, SE-751 21, Swed.
SO Journal of the Electrochemical Society (**2003**), 150(7), C472-C477
AB An in situ spectroelectrochem. study of the spontaneous potential oscillations, **galvanically** induced in the Cu-(II)-lactate and -tartrate systems, was performed using confocal **Raman** microspectroscopy (CRM). The results, concerning both the Cu-(II)-lactate and -tartrate systems, show that the **Raman** background signal of the Cu/cuprous oxide electrode exhibits an oscillating behavior with the same periodicity as the potential oscillations. This phenomenon most likely originates from the surface enhanced **Raman** scattering effect and the resulting deposit can be described as a layered composite made of Cu and cuprous oxide where the relative content of each constituent is a function of the working electrode potential during the deposition process; mainly Cu being deposited at the lower potentials and cuprous oxide at the higher potentials. Some aspects of the interaction of the org. anions with the growing surface are also discussed.

L10 ANSWER 20 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 137:301234 CA
TI Concentration Polarization of a Polymer Electrolyte
AU Georen, P.; Adebahr, J.; Jacobsson, P.; Lindbergh, G.
CS Applied Electrochemistry, Department of Chemical Engineering and Technology, Royal Institute of Technology, KTH, Stockholm, SE-100 44, Swed.
SO Journal of the Electrochemical Society (**2002**), 149(8), A1015-A1019
AB The salt concn. in a concd. binary polymer electrolyte was measured in situ by confocal **Raman** spectroscopy during **galvanostatic** polarization expts. The electrolyte studied was 0.8M lithium bis (trifluoromethanesulfonyl)imide in a copolymer of ethylene- and

propylene oxide at 25°. Recent work with a transport model and characterization of the transport properties, for the same electrolyte, was verified with the spectroscopic results of this study. A good agreement between modeled and measured results was found. The spectroscopic method suited well for these studies. The possibilities of using a transport model are briefly demonstrated and discussed.

L10 ANSWER 49 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 130:116383 CA
TI In situ process control of electrolytic metal deposition
AU Plieth, W.
CS Inst. Physikalische Chem. Elektrochem., Technische Univ. Dresden, Dresden, Germany
SO Zeitschrift fuer Physikalische Chemie (Munich) (**1999**), 208(1/2), 211-223
AB A review with 20 refs. Optical methods of process control are described based on the angle distribution measurements of the intensity of laser light which is scattered in situ from a metal surface on which a **galvanic** deposition evolves. From the distribution diagram of the laser light, an auto correlation function can be calcd. via the Fourier transformation method making available information or data representing the distance of structural roughness. This information can then be employed as data in a regulation process. A further development of this method on a variety of metals, Cu, Au, and Ag is based on the application of surfaced enhanced **Raman** spectroscopy towards the anal. detn. of the surface concn. of additives. Through the structural sensitiveness of the enhanced surface **Raman** spectroscopy, the development of surface structures such as nucleation phenomena can be obsd.

L10 ANSWER 82 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 114:70955 CA
TI **Raman** spectroscopic techniques in interfacial electrochemistry
AU Chang, R. K.
CS Cent. Laser Diagn., Yale Univ., New Haven, CT, 06520, USA
SO NATO ASI Series, Series C: Mathematical and Physical Sciences (**1990**), 320(Spectrosc. Diffr. Tech. Interfacial Electrochem.), 155-80
AB A review with 63 refs. is given on **Raman** spectroscopy of mol. adsorbates at the electrode-electrolyte interface. It requires sensitive photon detectors or metal surfaces that exhibit surface enhanced **Raman** scattering (SERS). The following topics related to **Raman** spectroscopy and SERS are discussed: (1) the latest advances in **Raman** instrumentation with emphasis on the recently available two-dimensional detectors; (2) the electrochem. surface activation procedures necessary to achieve SERS on Ag and Au electrodes; (3) the possible role of the electrochem. oxidn.-redn. cycle in producing and stabilizing metal **adatoms** and clusters as well as larger scale roughness; and (4) the connection between the fundamentals of the two accepted SERS models (electromagnetic and charge transfer) and the surface roughness.

L10 ANSWER 98 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 110:221262 CA
TI Spatial resolution of redox processes within nickel oxide films on gold

using real-time surface-enhanced **Raman** spectroscopy
AU Gosztola, David; Weaver, Michael J.
CS Dep. Chem., Purdue Univ., West Lafayette, IN, 47907, USA
SO Langmuir (**1989**), 5(3), 776-82
AB SERS was used to explore the spatial compositional changes within thin (30-500 Å) Ni(OH)2 films on Au in 1 M KOH during their electrooxidn. and subsequent redn. This involved monitoring the integrated intensity of the 480/560-cm-1 doublet, ISER, arising from Ni-O vibrations for the oxidized form as a function of the faradaic charge passed, qf. Real-time sequences of SER spectra were obtained under both anodic-cathodic **galvanostatic** and cyclic voltammetric conditions. The ISER-x profile obtained for a series of fully oxidized films of varying thickness, x, exhibits a sharp peak at x ≈ 50 Å (qf ≈ 2 mC cm-2), with an extended tail toward larger x. This observation is consistent with the occurrence of SERS predominantly for sites within ca. 20-30 Å of the Au surface, the **Raman** scattering intensity diminishing progressively for thicker layers as a result of increasing absorption of the incident (and scattered) light. These results are consistent with the expectations of electromagnetic enhancement models but inconsistent with chem. enhancement mechanisms requiring adsorption of the **Raman** scatterer on the metal surface. Since only the oxidized Ni oxide form absorbs light strongly under the conditions chosen (647.1-nm irradn.), the ISER-qf profiles obtained during oxidn. of a given film are sensitive to the spatial reaction mechanism. Such ISER-qf curves exhibit a pronounced peak at an oxidn. charge, qf ≈ 2 mC cm-2, similar to the ISER-qf profile for fully oxidized films of varying thickness, although the ISER values for the former curves are uniformly smaller than for the latter profile and increasingly so as the film thickness is increased. Similar ISER-qf curves are also obtained during subsequent film redn., although some hysteresis was obsd. These results were compared with simulated ISER-qf curves obtained for idealized models involving oxidn. proceeding either from the inner to the outer film edge or in a spatially homogeneous manner. While the observations are not entirely consistent with either model, they suggest that a hybrid mechanism is likely.

L10 ANSWER 111 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 108:30033 CA
TI Kinetics of electrochemical n-doping of polyacetylene investigated by impedance and **galvanostatic** pulse measurements
AU Nagele, G.; Nauer, G. E.; Kuzmany, H.; Kuerti, J.
CS Inst. Phys. Chem., Univ. Wien, Vienna, A-1090, Austria
SO Synthetic Metals (**1987**), 21(3), 293-9
AB The characteristics of n- and p-doping of polyacetylene in different solvents were investigated by potentiostatic and **galvanostatic** charge/discharge curves, the fast Fourier transform impedance method, and the **galvanostatic** pulse technique. The intercalated ions were Li+, Na+, ClO4-, and BF4-. From the impedance measurements a rapid detn. of electrochem. parameters like double-layer capacitance, electrolyte resistance, and polarization resistance at different states of charge and discharge were obtained. Similarly, electrode kinetics and diffusion behavior were detd. by the **galvanostatic** pulse technique. The doping characteristics were addnl. monitored by in situ resonance

Raman scattering expts. Strong evidence was found for solvent co-insertion during the doping process. Ion diffusion is rate controlling to a much higher degree for undoping compared to n-doping.

L10 ANSWER 164 OF 180 CA COPYRIGHT 2007 ACS on STN
AN 81:98620 CA
OREF 81:15569a,15572a
TI Laser **Raman** spectroscopy as a tool for study of diffusion controlled electrochemical processes
AU Clarke, J. S.; Kuhn, A. T.; Orville-Thomas, W. J.
CS Dep. Chem. Appl. Chem., Univ. Salford, Salford, UK
SO Journal of Electroanalytical Chemistry and Interfacial Electrochemistry (**1974**), 54(2), 253-62
AB As a preliminary step in the application of laser **Raman** spectroscopy to the investigation of diffusion controlled homogeneous reactions, the reversible reactions of 2 redox couples, K4Fe(CN)6/K3Fe(CN)6 and quinol/quinone, were studied. A thin layer cell of thickness variable by micrometer control offered the most suitable electrochem. cell for transient studies. By setting the monochromator to the wave-no. of a component's vibration band, the intensity-time (and concn.-time) changes were obsd. during **galvanostatic** and potential step electrolysis. Calibration of cell thickness and evaluation of diffusion coeffs. were accomplished by the application of the derived equations. The results for potential step electrolysis showed that for purified aq. solns. the obsd. changes corresponded well to the theor. equations within the range of cell thickness 60-150 μm. At lower values of cell thickness, however, poor current distribution at the working electrode distorted the intensity and current-time response.

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(FILE 'HOME' ENTERED AT 12:01:01 ON 07 DEC 2007)
FILE 'CA' ENTERED AT 12:01:12 ON 07 DEC 2007
L1 10 S BOCKRIS J?/AU AND DESPIC A?/AU
L2 10387 S ADATOM? OR ADION?
L3 0 S L1 AND L2
L4 2 S L1 AND GALVAN?
L5 55 S L2 AND GALVAN?
L6 57 S L4-5

=> d bib,ab 16 1-57

L6 ANSWER 28 OF 57 CA COPYRIGHT 2007 ACS on STN
AN 102:69292 CA
TI Application of morphological instability to the analysis of physical parameters of a metal surface: adsorption effect of hydrogen on **galvanostatic** electrodeposition
AU Makino, Tohru; Aogaki, Ryoichi; Niki, Eiji
CS Res. Div., AHS Japan Co., Japan
SO Journal of Chemical Physics (1984), 81(11), 5145-50